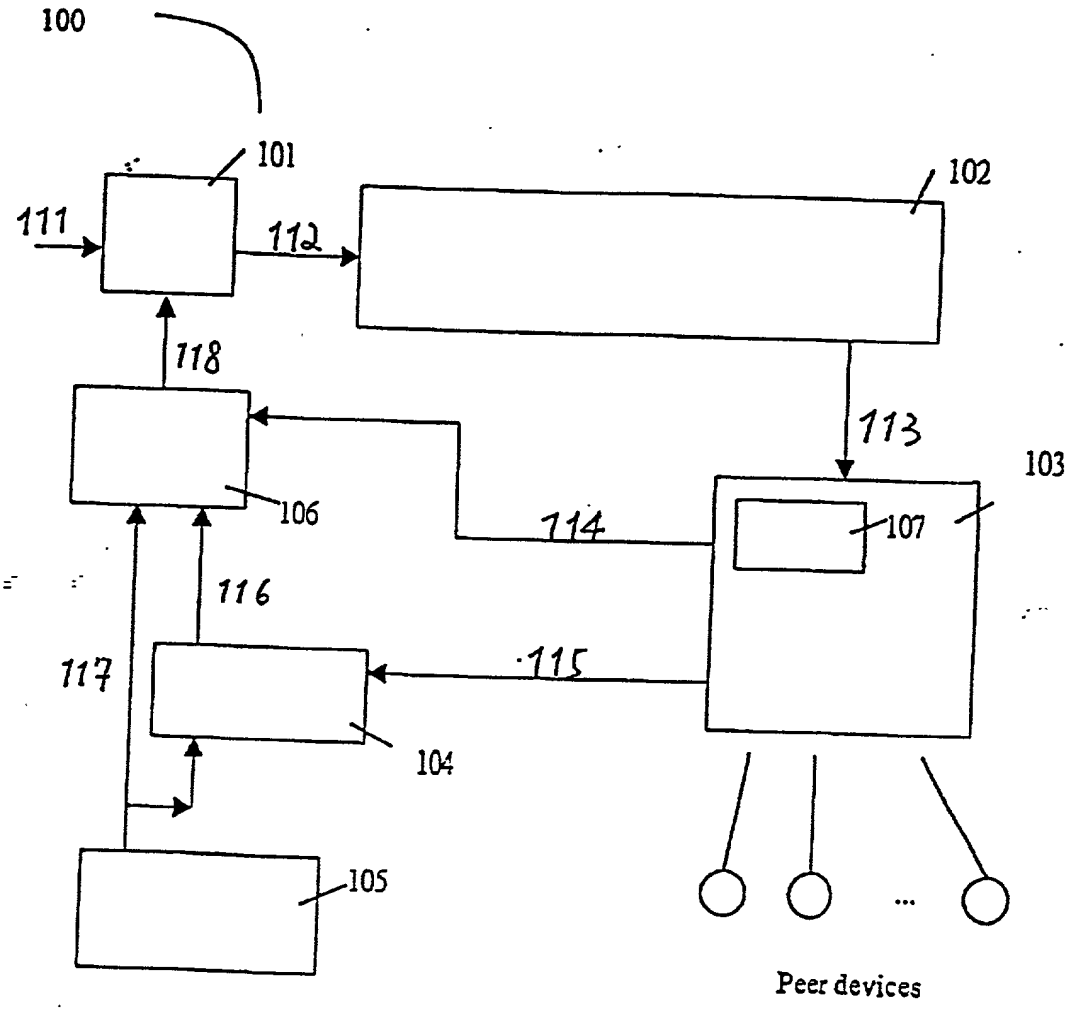
100
101
102
111
112
118
113
103
106
114
107
116
117
115
104
105
...
Peer devices

Fig. 1

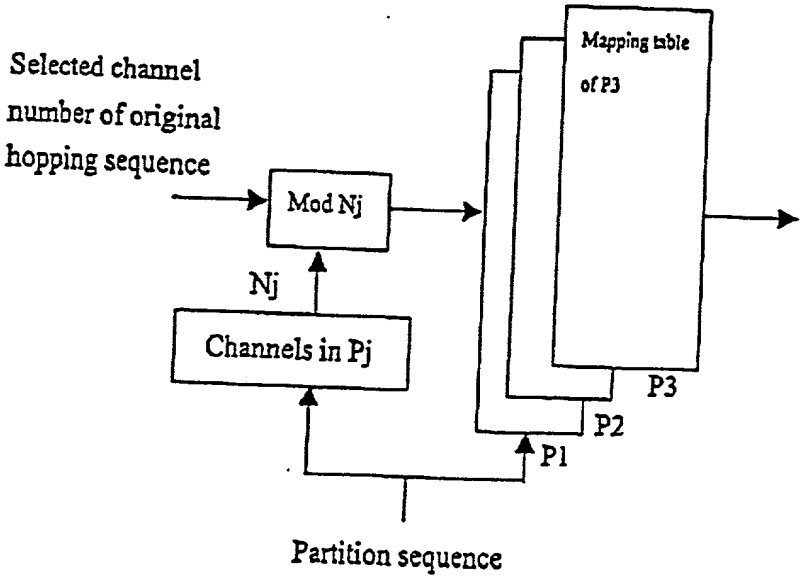
Selected channel
number of original
hopping sequence
Mod Nj
Nj
Channels in Pj
Mapping table
of P3
P3
P2
P1
Partition sequence

Fig. 2

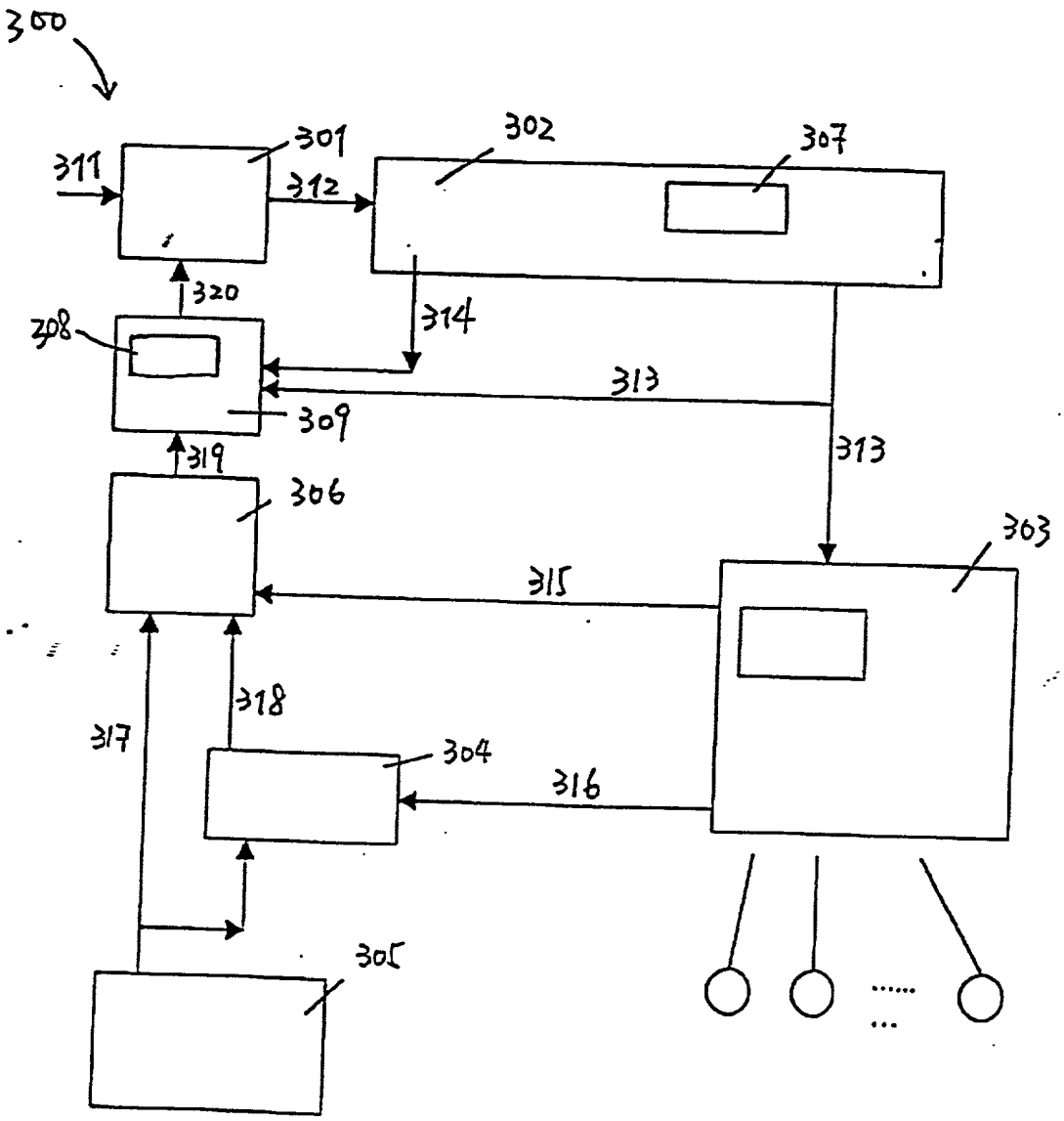
300
301
302
307
311
312
320
314
308
313
309
319
306
313
303
315
318
317
304
316
305

Fig. 3

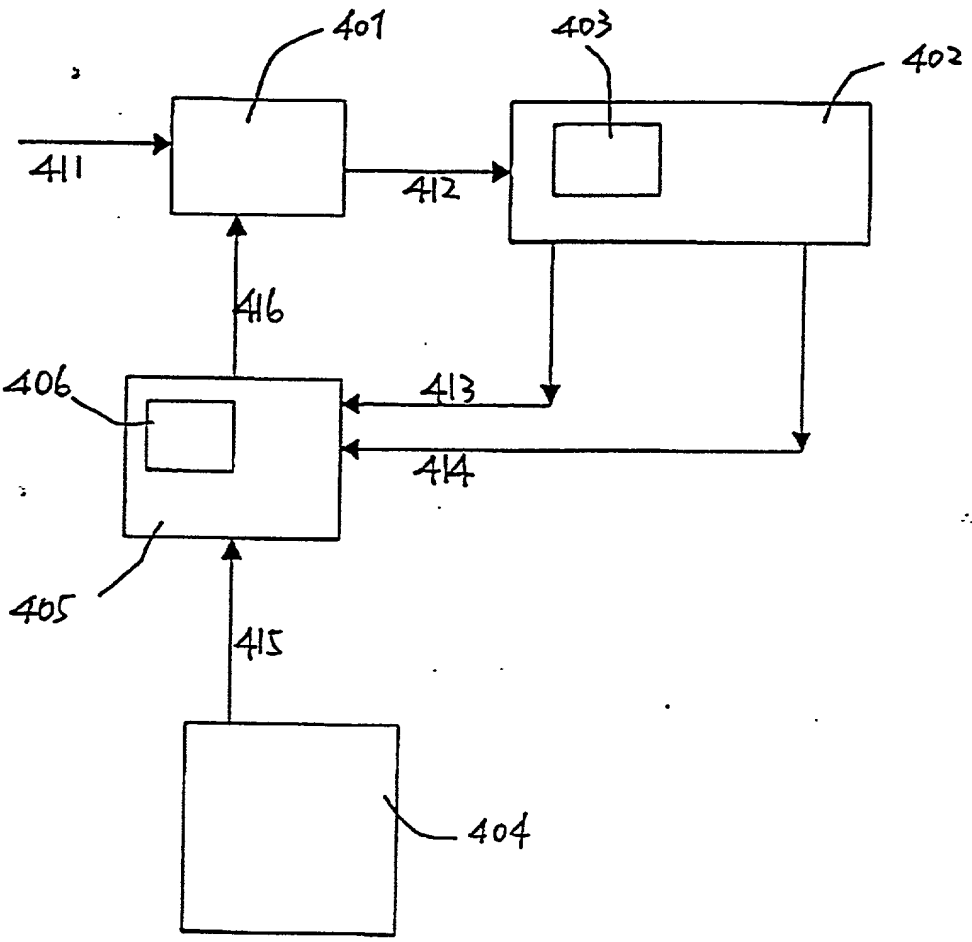

Fig. 4

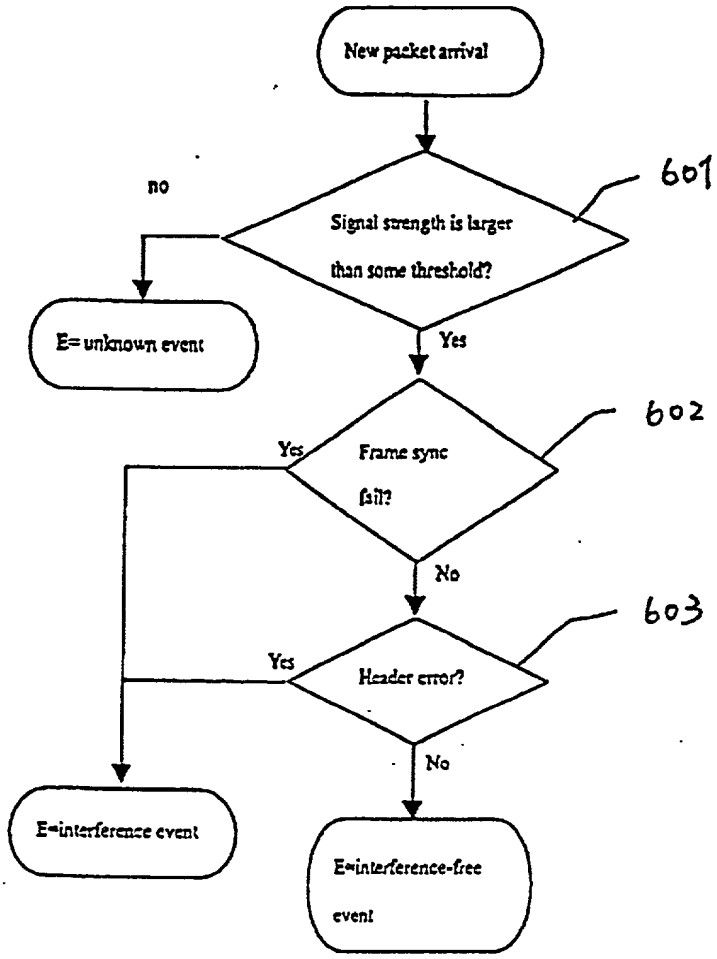
New packet arrival
601
no
Signal strength is larger than some threshold?
E= unknown event
Yes
602
Yes
Frame sync fail?
No
603
Yes
Header error?
No
E=interference event
E=interference-free event

Fig. 6

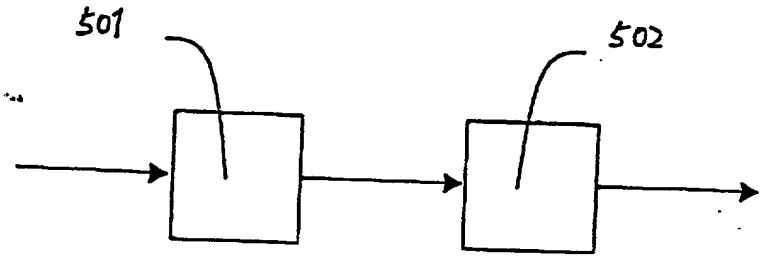

Fig. 5

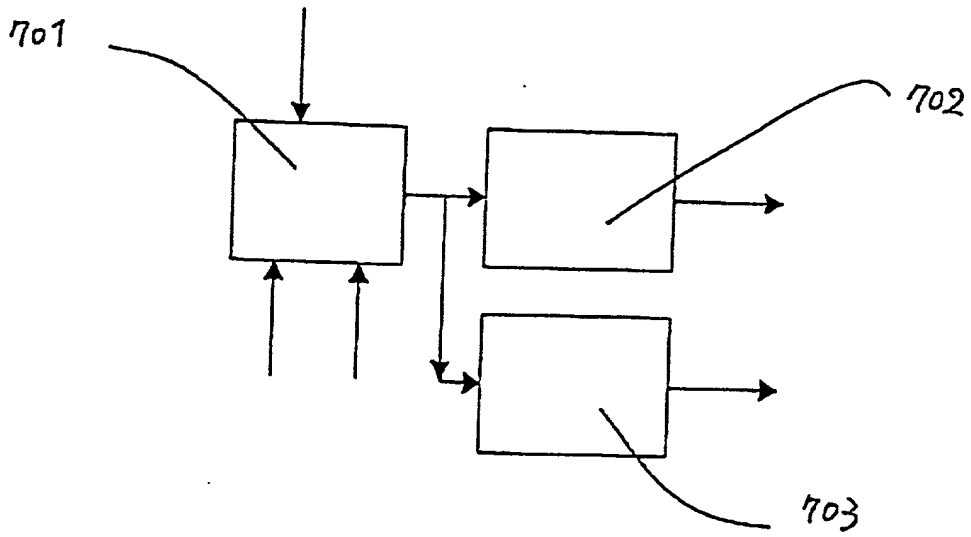

Fig. 7

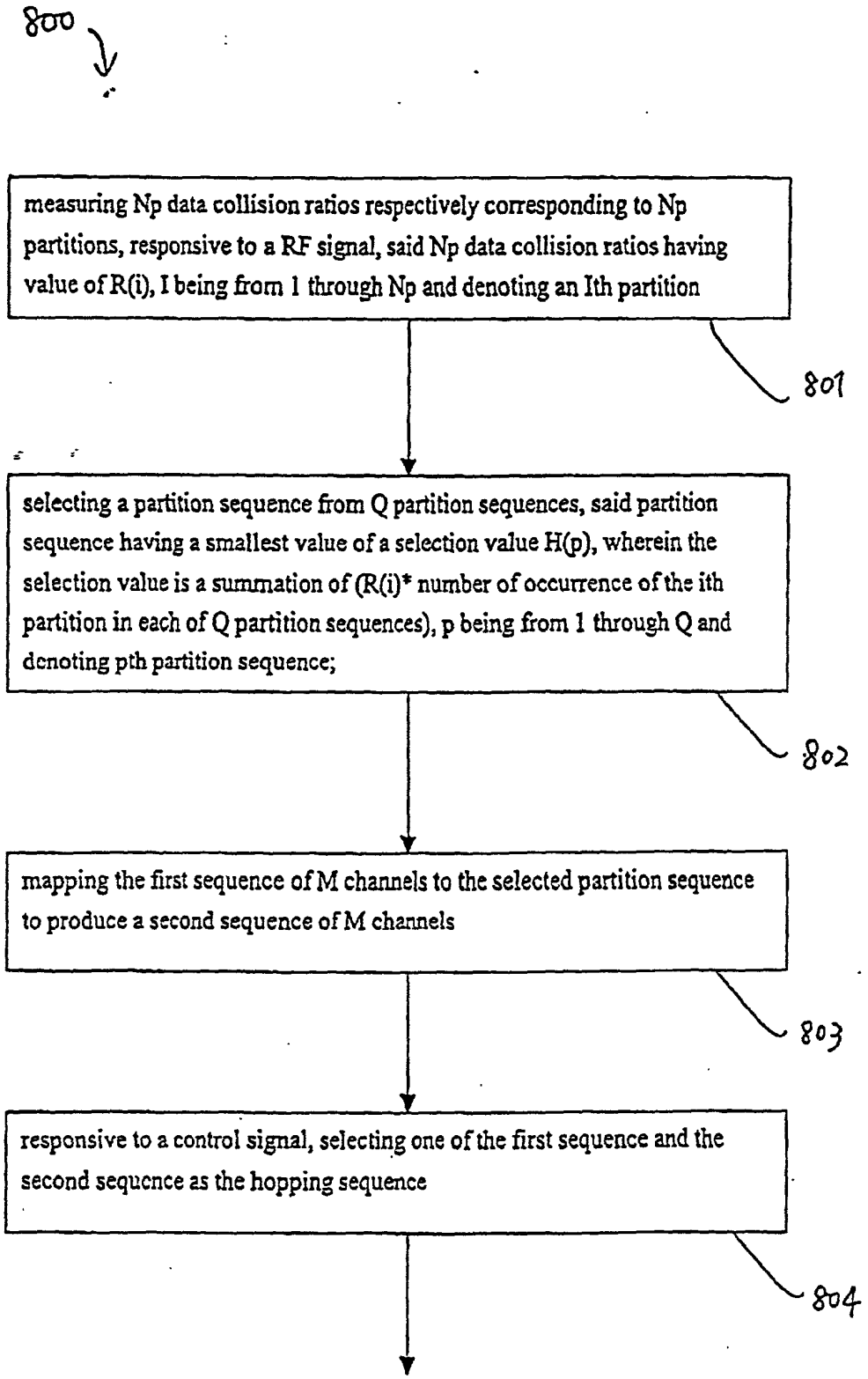
800
measuring Np data collision ratios respectively corresponding to Np partitions, responsive to a RF signal, said Np data collision ratios having value of R(i), I being from 1 through Np and denoting an Ith partition
801
selecting a partition sequence from Q partition sequences, said partition sequence having a smallest value of a selection value H(p), wherein the selection value is a summation of (R(i)* number of occurrence of the ith partition in each of Q partition sequences), p being from 1 through Q and denoting pth partition sequence;
802
mapping the first sequence of M channels to the selected partition sequence to produce a second sequence of M channels
803
responsive to a control signal, selecting one of the first sequence and the second sequence as the hopping sequence
804

Fig 8

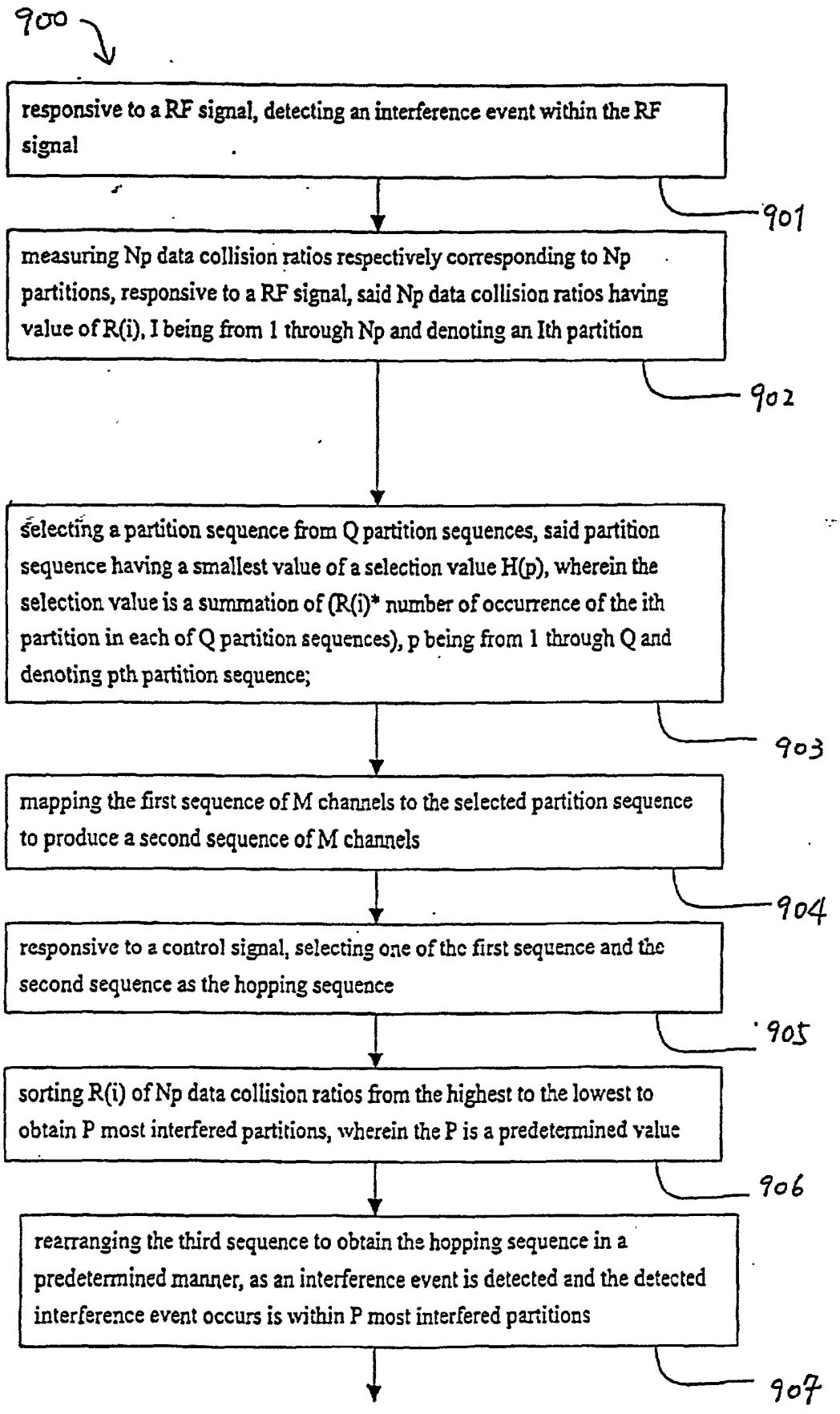
900
responsive to a RF signal, detecting an interference event within the RF signal
901
measuring Np data collision ratios respectively corresponding to Np partitions, responsive to a RF signal, said Np data collision ratios having value of R(i), I being from 1 through Np and denoting an Ith partition
902
selecting a partition sequence from Q partition sequences, said partition sequence having a smallest value of a selection value H(p), wherein the selection value is a summation of (R(i)* number of occurrence of the ith partition in each of Q partition sequences), p being from 1 through Q and denoting pth partition sequence;
903
mapping the first sequence of M channels to the selected partition sequence to produce a second sequence of M channels
904
responsive to a control signal, selecting one of the first sequence and the second sequence as the hopping sequence
905
sorting R(i) of Np data collision ratios from the highest to the lowest to obtain P most interfered partitions, wherein the P is a predetermined value
906
rearranging the third sequence to obtain the hopping sequence in a predetermined manner, as an interference event is detected and the detected interference event occurs is within P most interfered partitions
907

Fig. 9

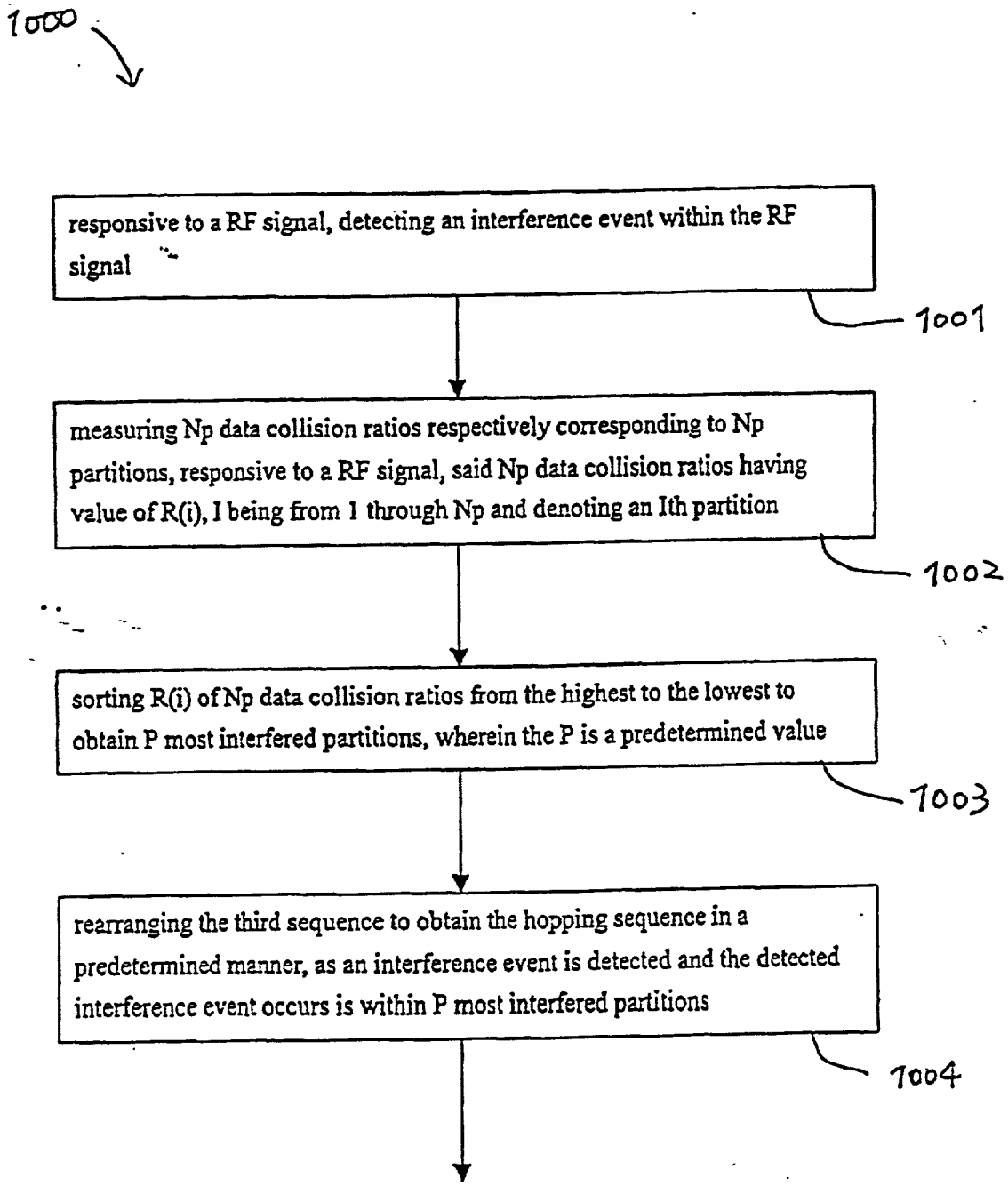
1000
responsive to a RF signal, detecting an interference event within the RF signal
1001
measuring Np data collision ratios respectively corresponding to Np partitions, responsive to a RF signal, said Np data collision ratios having value of R(i), I being from 1 through Np and denoting an Ith partition
1002
sorting R(i) of Np data collision ratios from the highest to the lowest to obtain P most interfered partitions, wherein the P is a predetermined value
1003
rearranging the third sequence to obtain the hopping sequence in a predetermined manner, as an interference event is detected and the detected interference event occurs is within P most interfered partitions
1004

Fig. 10

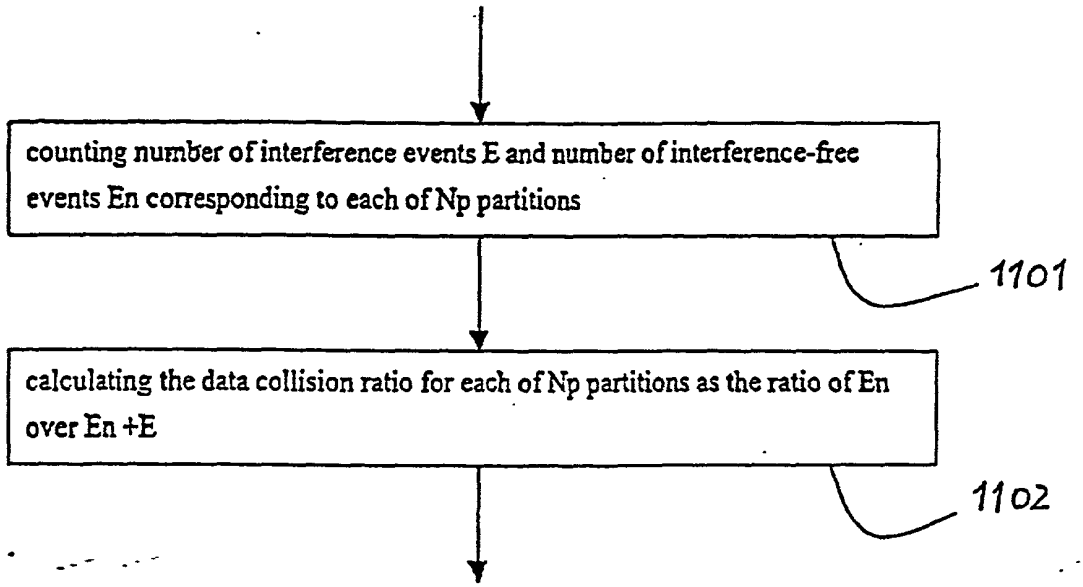
counting number of interference events E and number of interference-free events En corresponding to each of Np partitions
1101
calculating the data collision ratio for each of Np partitions as the ratio of En over En +E
1102

Fig. 11

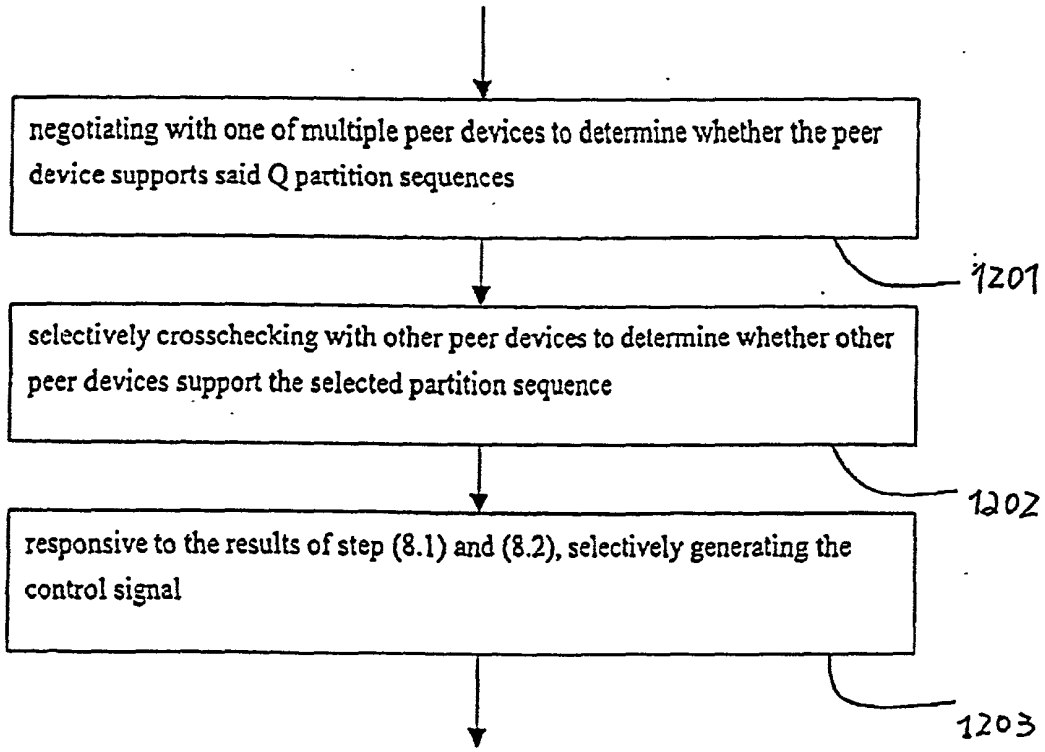
negotiating with one of multiple peer devices to determine whether the peer device supports said Q partition sequences
1201
selectively crosschecking with other peer devices to determine whether other peer devices support the selected partition sequence
1202
responsive to the results of step (8.1) and (8.2), selectively generating the control signal
1203

Fig. 12